

ABSTRACT:

A method of manufacturing a charge-coupled image sensor, wherein a silicon slice (1) is provided at its surface with semiconductor zones (8, 12, 16) formed by implantation of ions of dopants and subsequent heat treatments. The surface (2) is provided with a gate dielectric (3, 4) comprising a layer of silicon oxide (3) and a layer of silicon nitride (4) deposited on said layer of silicon oxide (3). A system of electrodes (17, 20) is formed on the gate dielectric layer (3, 4). In this method, the semiconductor zones (8, 12, 16) are not formed in the silicon slice (1) until after the gate dielectric layer (3, 4) has been formed, the ions being implanted through the gate dielectric layer (3, 4). An image sensor thus formed has a very small dark current, a very low fixed pattern noise, and images formed by means of the sensor are practically free of white spots.

Fig. 11